Date: August 8, 2014

Behavioral Risk Factor Surveillance System

Appendix 1: Application for Proposal for the 2016 BRFSS Questionnaire

Please complete this application as carefully and thoroughly as possible. Incomplete proposals will be returned without review.

SECTION A: TYPE OF APPLICATION

Is this a(n): ☐ **MODIFICATION** ☒ **ADDITION** ☐ **CONTINUATION (no changes)**
☐ **NEW PLAN FOR EXISTING CORE OR MODULAR QUESTIONS**
☐ **PROGRAM WILL HAVE NO QUESTIONS FOR 2016**

SECTION B: SECTION OF QUESTIONNAIRE

This is for a(n): ☒ **OPTIONAL MODULE** {skip to Section C}
☐ **EMERGING CORE**[1] ☐ **CORE**[2]

If this is an application for Emerging Core or Core, are you interested in including as an Optional Module if question(s) do not pass state coordinator vote?

☐ Yes
☐ No

SECTION C: PROGRAM INFORMATION

Program Name: Office on Smoking and Health
Program Contact Person: Stacy Thorne (Secondary contact: Gillian Schauer)
Email: SThorne@cdc.gov (secondary contact: gschauer@cdc.gov) **Telephone:** +1 (770) 488-5366

SECTION D: SOURCE

1. **What is the source of the question(s)?**

☐ We developed the question(s) **{skip to Q4}**
☒ The question(s) is/are from an existing instrument or adapted from an existing instrument

SECTION E: PERFORMANCE

If not developed by your program then answer Q2-3; otherwise, skip to Q4

2. **Please provide the name of the original instrument or source for each question:**

Marijuana Question 1: Current use/frequency of use

During the past 30 days, on how many days did you use marijuana or hashish?
0-30 Number of Days
88. None (skip to next module)
77. Don't know/not sure (skip to next module)
99. Refused (skip to next module)
If response =1 to 30, 77 → proceed to Marijuana Question 2

Source: National Survey on Drug Use and Health (2001-present), OR, WA, AK, CO State-added BRFSS

[1] Please note that the number of emerging core questions is limited to 4. Proposals with more than 4 questions will not be considered for emerging core.
[2] Additions to the BRFSS Standard Core Questionnaire are limited and will be prioritized.

Marijuana Question 2: Marijuana mode of use

During the past 30 days, how did you use marijuana? Please tell me all that apply. Did you….
[INTERVIEWER NOTE: Use clarification in parentheses if needed.]
[Select all that apply]
Smoke it [if needed: (in a joint, bong, pipe, or blunt)]
Eat it [if needed: (in brownies, cakes, cookies, or candy)]
Drink it [if needed: (in tea, cola, or alcohol)]
Vaporize it [if needed: (in an e-cigarette-like vaporizer)]
Dab it [if needed: (using butane hash oil, wax, or concentrates)]
Use it some other way
Don't know/Not sure
Refused

Source: WA State BRFSS. Similar to a state-added BRFSS question fielded by Oregon, Alaska and Colorado. A variant of this question is also included on the national YRBS survey.

3. **Did you modify the question(s) from the original instrument?**

☒ Yes
☐ No

4. **Have these questions been part of a human subjects review determination and if so, what is the protocol #.**

☐ **State level**

If checked, provide Protocol #

☐ **HHS level**

If checked, provide Protocol #

Questions 5 and 6 ask for evidence of validation and reliability testing. Please click on the links for more information regarding these concepts or go to this Link for a summary of both.

5. **Have the question(s) undergone validation testing?**

☒ Yes
☐ No
☐ Yes – but not completed

If yes, please provide evidence of the extent of validity testing by providing the following information for each study conducted:

Study title:
Unknown, N/A

Brief description of methods:
The proposed question 1 was tested and validated prior to use on NSDUH. In particular, a 2007 study co-sponsored by SAMSHA and NIDA examined the validity of NSDUH self-report data on drug use among persons aged 12 to 25 years old.

Proposed question #2 has been fielded in Washington, and is a variant of a question fielded by three state BRFSS samples (AK, CO, OR) in 2014 and 2015. In developing the question, states established content and face validity for the question by working with subject matter experts, and gathering feedback from users. Data from an initial fielding of the question were used to further improve the categories (e.g., "dabbing" was added as a category).

Results, including relevant statistics:

For proposed question #1, the SAMSHA validity study suggested that there were some reporting differences in either direction, with some respondents not reporting use, but testing positive, and some respondents reporting use, but not testing positive. Inexactness in the window of detection for drugs in biological specimens (e.g., urinalysis), and biological factors may have affected the window of detection, and could account for some of these inconsistencies between self-reports and biochemically validated reports. However, SAMSHA has undertaken approaches to improve the validity of data, including using ACASI for survey administration.

WA, CO, OR, and AK have questions exactly like or very similar to #1 and #2 on their current state-added BRFSS questionnaires, and have not reported any issues with the potentially sensitive nature of the questions.

Citation (if applicable):

For reliability and validity information for proposed Question 1, see the complete NSDUH methodology report. See also: Harrison, L.D., Martin, S.S., Enev, T., & Harrington D. (2007). Comparing drug testing and self-report of drug use among youths and young adults in the general population. DHHS Publication No. SMA 07-4249, Methodology Serires M-7. Rockville, MD.

6. **Has the reliability of questions been tested?**

   ☒ Yes

   ☐ No

   ☐ Yes – but not completed

   If yes, please provide evidence of the extent of reliability testing by providing the following information for each study conducted:

Study title:

Unknown/ N/A

Brief description of methods:

For proposed question from NSDUH, a reliability study was conducted as part of the 2006 NSDUH to assess the reliability of responses to the entire NSDUH questionnaire (SAMSHA, 2010 – see citation section). As part of that study, 3,136 individuals were interviewed on two occasions during 2006, generally 5 to 15 days apart. Reliability responses were assessed by comparing the responses of the first interview with the responses from the re-interview.

No reliability data have been collected (to our knowledge) for the proposed questions #2.

Results, including relevant statistics:

For the 2006 NSDUH reliability study, none of the kappa values for the substance use variables fell below 0.82, indicating substantial to nearly perfect response consistency.

Citation (if applicable):

For reliability and validity information for proposed Question 1, see:

Substance Abuse and Mental Health Services Administration (2010). *Reliability of Key Measures in the National Survey on Drug Use and Health.* Office of Applied Studies, Methodology Series M-8, HHS Publication No. SMR 09-4425, Rockville, MD.

7. **Have the question(s) undergone cognitive testing?**

☒ Yes (skip next question and go to Date of testing Question) → Cognitive testing is planned

☐ No

If no, does program want PHSB to have testing conducted?

☐ Yes (go to Question 8)

☒ No (go to Question 8)

If yes, please describe the study design and results:

Date of testing:
Unknown → Cognitive testing of proposed Questions #1 was conducted by SAMSHA as part of their inclusion on the National Survey on Drug Use and Health. Informal cognitive testing of proposed question #2 was conducted by OR, WA, and CO prior to adding the question to their state BRFSS modules. Questions have now been fielded for more than a year, allowing states to further assess and confirm the clarity of the question. WA, CO, AK, and OR have reported no issues with the questions.

CDC/OSH has planned to cognitively test both questions for phone administration.

Study design:
N/A

Results:
N/A

Please submit any cognitive testing reports to Dr. Carol Pierannunzi (ivk7@cdc.gov) and copy George Khalil (uwm4@cdc.gov).

8. **Have the questions already been administered in surveys or research studies?**

☒ Yes

☐ No

If yes, please provide citation(s) and population to which it was administered:

Citation:
The proposed question #1 has been administered as part of NSDUH since 2001. The proposed question #2 has been fielded by WA as part of their state-added BRFSS. It has also been administered in a slightly varied form (seeking individual responses to each mode versus taking a "select all" approach) by three states (AK, OR, CO) as part of their state-added BRFSS. In addition, a variation of question #2 has been administered by independent researchers, and as part of CDC's added questions to the 2014 Summer Styles panel survey administered by GfK. Finally, a slight variation of question #2 (seeking a yes/no answer on each mode versus a "select all approach" is included in the YRBS National Survey.

Population:

For all questions – the populations in which they have been administered included a nationally-representative or state-representative sample of adults.

9. **Please indicate approximate total time to administer the set of questions, including instructions.**
   - ☐ <30s
   - ☒ 30s-1min
   - ☐ 1-2 min
   - ☐ >2 min
   - ☐ Unknown

10. **Please indicate the average time to administer <u>per question.</u>**
    - ☒ <10s → For question 1
    - ☐ 11-20s
    - ☒ >20s → For question 2 (NOTE: This question would only be asked of current users)
    - ☐ Unknown

    Please provide the methods used to obtain the timing data:
    Data provided by states, and by sample administration.

11. **Are the question(s) telephone/cell phone-survey ready?**
    - ☒ Yes
    - ☐ No

    Please describe how you determined the telephone/cell phone-survey readiness of the survey
    Both questions are currently being administered as part of four state BRFSS samples.

SECTION F: PUBLIC HEALTH IMPORTANCE

12. **Please provide a rationale for why the question(s) is/are important to health behavior or chronic disease by addressing the following:**

Prevalence or disease burden:

Marijuana is the most commonly used federally illicit drug in the United States, with 7.6% of adults reporting past-month use in 2013, and higher prevalence of use among young adults ages 18-25 (NSDUH, 2014). As of 2015, four states and the District of Columbia have voted to legalized recreational marijuana use and 23 states and the District of Columbia have legalized medical marijuana use. In light of changing policies, national and state-based surveillance are needed to track possible changes to use frequency and patterns. State-level data can provide a baseline for states that have or may have forthcoming marijuana policy changes, and states that surround states with marijuana legalization policies.

Estimated costs to the public and healthcare:

While we don't yet know the full impact the legalized medical and recreational marijuana will have on the public, legalization stands to impact a number of public health areas, including chronic disease (due to potential negative health effects and possible benefits), maternal and child health (due to use during pregnancy and breastfeeding, and the potential for accidental ingestion), youth and adolescent health (due to the potential for acute injury, impairment, engagement in other risky behaviors, and educational and cognitive outcomes), injury prevention (due to potential impaired driving, acute injury, potential for increased falls in the elderly),

workplace safety, environmental health (due to secondhand smoke exposure, food safety, pesticide use, waste disposal), alcohol use, tobacco use, mental health, and health disparities.

The potential impact on a multitude of areas of public health make this an important topic to include on BRFSS. While marijuana use is included as part of NSDUH, NSDUH does not include questions about core public health risk factors and chronic diseases that may be associated with marijuana consumption. Furthermore, NSDUH does not contain a question about the mode of marijuana use. Question #2 that we have proposed is critically important, since modes of use may be changing in states with legalized marijuana, and may present added public health risks (e.g., risks of acute psychotic episodes from acute overdose of edibles, risks of explosions or other acute injuries from preparing or using butane hash oil for "dabbing"). The health risks of various modes of marijuana use are also not clearly understood, making national tracking of modes of use important to inform future longitudinal studies that may seek to quantify the differential health risks.

How the topic is related to a state or national initiative (e.g. Healthy People 2020):

Healthy People 2020 currently has a measure about preventing marijuana use and risk perception in adolescents (SA 2.2. – Increase the proportion of at-risk adolescents who refrain from using marijuana for the first time in the past year; SA 3.5 – Increase the proportion of adolescents who disapprove of trying marijuana or hashish once or twice; and SA 4.2 – Increase the proportion of adolescents who perceive great risk associated with smoking marijuana once per month). While the current Healthy People 2020 objectives on marijuana are limited to adolescents, we know that marijuana use is increasing in adults (NSDUH, 2014) – particularly in young adults and recently in older adults ≥50 years. As marijuana legalization policies change, and as adolescents who have come of age in an era of legalization enter adulthood, monitoring changes to marijuana use and associated risks will be important.

13. **Besides your program, how will other states, programs or agencies benefit from the inclusion of these question(s) in the BRFSS?**

Nationally, other federal agencies (OASH, NIDA, FDA) have inquired about the inclusion of marijuana questions as part of BRFSS. While NSDUH focuses on substance use, it does not include questions about health risk factors and chronic diseases that may be associated with marijuana use or changing marijuana policies. Having a nationally-representative data set that allows CDC and public health partners to assess changes to marijuana use patterns, and associations between use and other public health goal areas is critically important.

At a state level, a number of states have already proactively reached out to CDC to include BRFSS questions on marijuana. States with legalized recreational or medical marijuana, which is now about half of all U.S. states, will benefit from the inclusion of these questions because they will help provide a standard comparison between states so states can begin to assess the potential impacts of differing policies. Importantly, inclusion of these questions on BRFSS, versus just on NSDUH, will allow state public health departments to monitor changes in the association between marijuana use and other public health risk factors and diseases. Inclusion of these questions in states that do not have legalized medical or recreational marijuana will provide an important baseline that is unfortunately lacking in other states, so that they can see how use patterns and associations change if future state policies change, or if policies change in a neighboring state.

Other CDC programs will benefit from the inclusion of these questions because they will be able to assess and track changing associations between marijuana use, frequency of use, mode of use, and various potentially related public health areas (e.g., acute injury, mental health, chronic disease, other risk behaviors, etc.).

SECTION G: ANALYTIC PLAN

14. **Please explain why state-level estimates are desired (e.g., impact for your program/agency, local/state/national policy implications, support to research funding.)**

State level estimates are desired for a number of reasons. First, to provide states who may not have added these questions to their state BRFSS with important baseline data. While states that legalize marijuana eventually receive state tax funds that may be allocated for public health surveillance, states do not receive

these funds until well into their legalization process (sometimes up to one year after recreational stores open). This means that states have a challenging time collecting baseline and early surveillance. The inclusion of the most important marijuana surveillance questions on BRFSS would help provide states with benchmark or baseline data.

Second, to provide a standard measure that can be compared between states, allowing states to benchmark or compare their data to data from states with similar or different policies. In particular, states with legalized marijuana are interested in being able to address some of the following questions:

- Is use of edibles in surrounding states as high was use of edibles in Colorado? Is use of combusted forms higher in states with legalized recreational marijuana versus legalized medical marijuana only? Are there within-state or between-states changes in current daily or near daily use following recreational legalization.

Nationally, these data can help provide a sense of how marijuana use, frequency of use, and mode of use change with the changing policy landscape – much like tobacco use or obesity data have demonstrated. These data are also important to be able to analyze at a state level along with data on tobacco use and alcohol use, since policies legalizing marijuana may impact existing policies regulating tobacco or alcohol use.

Analyses we would seek to conduct at CDC with these data would include:

- Demographics of current marijuana users by state or region.
- An assessment of mode of use among current marijuana users, by state or region (if sample size permits).
- A comparison of BRFSS marijuana use prevalence vs. NSDUH marijuana use prevalence – for consistency purposes.
- An assessment of other health risk behaviors (e.g., alcohol use, tobacco use, acute injury risk behaviors) among current marijuana users.

15. Please explain why there is a need to measure the question(s) over time

Marijuana policies are rapidly changing. Being able to assess the impact of recreational and medical marijuana policy changes within states over time, and between states by year and over time is important to help assess possible associations with legalization.

16. Please describe how calculated variable(s) will be constructed from the question(s)

The proposed questions do not include any calculated variables.

17. Please describe how the variable(s) will be used in analyses (e.g., outcome, predictor, etc.).

For prevalence estimates of current use:

$$\frac{\text{\# adults age 18 and older answering 1-30 on proposed question \#2}}{\text{all adults age 18 and older}}$$

For mode of use estimates:

- Prevalence of use of each mode (mode / all current users)
- Prevalence of combusted marijuana use (smoked, vaporized, dabbed)
- Number of modes of use (1 mode, 2 modes, 3+ modes)

For associative models (for example):

Marijuana could be used as a covariate in models looking at covariates of risk factors and disease.

18. **Based on your questions of interest and anticipated effect size, please provide an estimate for required sample size and the rationale/calculations used to determine the size.**

Estimated Sample Size:
N/A

Rationale/calculations:
N/A

SECTION H: MODIFICATIONS

19. **Current wording of proposed question(s) (please attach additional Word document if space below is not sufficient):**

20. **<u>New</u> wording of proposed question(s) (please attach additional Word document if space below is not sufficient):**

21. Explanation and rationale for proposed wording change.